

Applicant: KODAK ALKALOID CO. INC.  
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In the claims:

Please amend claim 1a, 1b, 1c, 1d, 1e, 1f, and 1g and add new claims 1h and 1i to read as follows:

1. ~~Currently Amended~~ A method for recording a bar code which consists of a plurality of parallel lines of varying thickness, characterized by the steps of:

a) capturing, by means of a reading device, a sequence of two-dimensional images ~~of~~, the sequence including a subset of images, each image of the subset including at least portions a portion of the bar code during moving of the reading device across the same;

b) detecting edges of the bar code in ~~at least a~~ each image of the subset of the images;

c) determining, ~~from the detected edges of at least a~~ each image of the subset of the detected images, possible displacements of the detected edges in relation to the detected edges of a preceding image at least one other image of the subset of images;

d) determining the most probable sequence of displacements of each image of the subset of images in relation to at least one other image of the subset of images for the sequence subset of images; and

e) determining the bar code from the sequence of displacements of each image of the subset of images in relation to at least one other image of the subset of images for the sequence subset of images.

2. ~~Currently Amended~~ A method for recording a bar code as claimed in claim 1, characterized in that the sequence of displacements of each image of the subset of images in relation to at least one other image of the subset of images for the sequence subset of images is determined by means of a computer.

3. (Currently Amended) A method for recording a bar code as claimed in claim 1, in which step b) comprises the following steps:

b1) generating, for at least a subset of the images which represent parts of the bar code, a histogram corresponding to the darkness level in said pixels along said band; and

b2) differentiating said histogram so that a sequence of edge coordinates is provided, which describe where along said band in the image the edges of the lines of the bar code are located.

4. (Original) A method for recording a bar code as claimed in claim 3, in which differentiated histograms are generated for a plurality of bands extending over an image at different angles, and in which the band whose differentiated histograms have the highest peaks is selected as the band which is essentially perpendicular to the direction of extension of the lines of the bar code.

5. (Original) A method for recording a bar code as claimed in claim 4, in which differentiated histograms are generated for more than one image of the image sequence than in subsequent images.

6. (Currently Amended) A method for recording a bar code as claimed in claim 4, in which an edge coordinate is determined more accurately by maximizing an approximating function running through the points where the differentiated histograms in said

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in claim 1, in which in step c) possible displacements are determined by assuming each a displacement and its edge coordinates correspond to each other and determining whether the remaining edges calculate correspond to each other.

8. Original: A method for recording a bar code as claimed in claim 1, in which in step d) said most probable sequence of displacements is determined with a criterion based on low acceleration of the reading device.

9. Original: A method for recording a bar code as claimed in claim 1, in which in step d) for the images in which edges have been detected, error functions are determined for at least a subset of the conceivable displacements relative to displacements of a preceding image.

10. Currently Amended: A method for recording a bar code as claimed in claim 1, in which said consists of a plurality of parallel lines of varying thickness, characterized by the steps of:

a) capturing, by means of a reading device, a sequence of two-dimensional images of the bar code during moving of the reading device over the code;

b) selecting from the sequence of images at least one image in which edges have been detected;

c) determining, for the edges found in one of the images of the detected images, a set of displacements in relation to the edges of a preceding image;

d) determining the most probable sequence of displacements

displacements of a preceding image;

e) reconstructing the bar code by means of said sequence of images and said most probable sequence of displacements;

said error function  $e_i$  is calculated as

$$e_i = \max[e_{i-1}, |v_i - v_{i-1}|, |a_i - a_{i-1}|]$$

wherein

$e_{i-1}$  = error function of the displacement of a preceding image,

$v_{i-1}$  = speed of the reading device when the preceding image was captured if the displacement of the preceding image is valid,

$v_i$  = speed of the reading device when the image in question was captured if the displacement of the image in question is valid,

$a_{i-1}$  = acceleration of the reading device when the preceding image was captured if the displacement of the preceding image is valid,

$a_i$  = acceleration of the reading device when the image in question was captured if the displacement of the image in question is valid.

11. (Currently Amended) A method for recording a bar code as claimed in claim 9, in which for ~~the~~ a last image in the image sequence the displacement relative to the displacement of the preceding image, which makes the least error function, is selected as the most probable displacement.

12. Original. A method for recording a bar code as claimed in claim 11, in which for each image preceding the last image, the displacement with respect to the most probable displacement of

14. Currently Approved: A reading device for recording a bar code, which consists of a plurality of parallel lines of varying thickness, characterized in that the reading device comprises:

means for capturing a sequence of two-dimensional images of, the sequence including a subset of images, each image of the subset including at least portions of portions of the bar code when moving the reading device across the same,

means for detecting the edges of the bar code in at least a  
each image of the subset of the images,

means for determining possible displacements from the detected edges of each image of the subset of images in relation to the detected edges of a preceding image for the edges of at least a one other image of the subset of the detected images,

means for determining the most probable sequence of displacements ~~for the sequence of images, of each image of the subset of images in relation to at least one other image of the subset of images for the subset of images, and~~

means for reconstructing the bar code data by means of said sequence of images and said most probable sequence of displacements.

in that the program comprises instructions for the steps of:

a) capturing by means of a reading device a sequence of two-dimensional images ~~of~~, the sequence including a subset of images, each image of the subset including at least ~~part of~~ a portion of the bar code when moving the reading device over the same;

b) detecting the edges of the bar code in ~~at least each~~ image of the subset of ~~the~~ images;

c) determining from the detected edges of each image of the subset of images, possible displacements of the detected edges in relation to the detected edges of a preceding image for the edges of at least a subset of the detected images; at least one other image of the subset of images;

d) determining the most probable sequence of displacements for the sequence of images; each image of the subset of images in relation to at least one other image of the subset of images for the subset of images; and

e) reconstructing the bar code data by means of said sequence of images and said most probable sequence of displacements.

17. Currently Amended: A method for recording a bar code, characterized by the steps of:

- capturing by means of a reading device a sequence of two-dimensional images of the bar code, the sequence including a subset of images, each image of the subset including at least a portion of the bar code when moving the reading device over the same;

- determining from at least one detected edge of each image of the subset of images, possible displacements of the edges of the images in relation to the edges of a preceding image for the edges of at least a subset of the detected images; at least one other image of the subset of images;

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relation to at least one other image of the subset of images for the subset of images; and

- reconstructing ~~the~~ bar code data by means of said sequence of images and said most probable sequence of displacements.

18. (New) The method of recording a bar code as claimed in claim 1, wherein the bar code data is an image of the bar code.

19. (New) The method of recording a bar code as claimed in claim 1, wherein the bar code data is information contents of the bar code.